

## What does this mean for our parks?

Loss of pines due to SPB infestations within Suffolk County Parks threatens our valuable forest ecosystems, and the quality of recreational amenities that they provide. The SPB has infested and killed thousands of trees since its discovery on Long Island in 2014. There are no current methods to eradicate the beetle, however infestations can be suppressed. In an effort to save additional trees from becoming infested within our parks, "cut and leave suppression" is being conducted. In addition, pine cones have been collected from felled trees, to propagate seedlings for ongoing restoration activities.

While visiting our parks, you may notice areas where the pines have already been cut down. You may also see flagged standing pines that are marked for cutting. Because SPB spreads so rapidly, some trees die before they are able to be identified and cut down. NYSDEC grants have been awarded to assist Suffolk County Parks with these SPB monitoring and suppression activities.

As a reminder when utilizing the parks, you as a park patron should always be aware of your surroundings for your safety, and remain on designated trails.



## For more information on Southern Pine Beetle

### NYS Department of Environmental Conservation

<http://www.dec.ny.gov/animals/99331.html>

[http://www.dec.ny.gov/docs/lands\\_forests\\_pdf/spbcccearticle2.pdf](http://www.dec.ny.gov/docs/lands_forests_pdf/spbcccearticle2.pdf)

[http://www.dec.ny.gov/docs/lands\\_forests\\_pdf/spbplan2016.pdf](http://www.dec.ny.gov/docs/lands_forests_pdf/spbplan2016.pdf)

### USDA

[https://www.fs.usda.gov/Internet/FSE\\_DOCUMENTS/fsbdev2\\_042840.pdf](https://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev2_042840.pdf)

## Suffolk County Parks

**Administration Office:** 631-854-4949

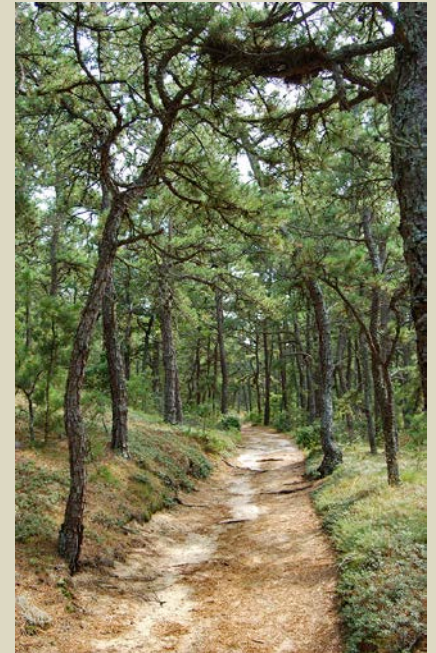
**Park Rangers:** 631-854-1422

For more information about our parks:



[www.suffolkcountyny.gov/parks](http://www.suffolkcountyny.gov/parks)

## Southern Pine Beetle



**Steven Bellone** *County Executive*

**Philip A. Berdolt** *Commissioner*

## Natural History

The southern pine beetle (SPB) is a small destructive bark beetle that has become a threat to Long Island's pine forests and suburban landscapes. Though all pines are susceptible, pitch pines have been the most affected in our parks. The SPB is native to the southern United States but has recently expanded its range into New York. The adult beetles attack trees in large numbers. They enter the trees by boring through the bark and create S-shaped tunnels to lay their eggs. The beetles also introduce a "wood-staining fungi" into the tree which clogs the trees' water-conducting tissues. These factors disrupt the flow of nutrients and can cause the death of a tree within 2-4 months. SPB will overwinter in a tree during the cold weather, and become active as temperatures increase. SPB is most active in the spring and summer. Multiple hatches can occur within one season, increasing the rate of spread and rapidly killing large numbers of trees.

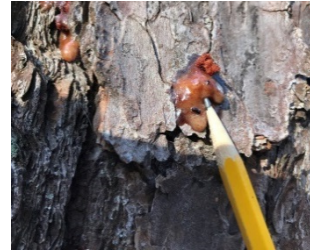


## Signs and Symptoms

The infestation of pines by the SPB is categorized into the following three stages.

### Stage 1 (Fresh Attack):

- The canopy is green.
- White to red popcorn sized pitch tubes are typically found 5ft from the tree base, all the way up the trunk into the canopy.



### Stage 2 (Infestation):

- The entire canopy changes color to various shades of orange and yellow.
- SPB create S-shaped tunnels in the cambium under the bark of the tree.



### Stage 3 (Vacated):

- The tree canopy has lost most, if not all, of its needles and is considered dead.
- Numerous pin-sized holes are found on the bark from where the SPB exited the tree.



*The turpentine beetle (TB) is often mistaken for the southern pine beetle (SPB), as they both display similar signs and symptoms. However, the TB pitch tubes and boring holes are much larger and are only found towards the base of a tree. While the TB may kill a tree, it is less destructive to the forest than the SPB, as it does not rapidly kill trees in large numbers.*

## What is being done?

**Cooperative efforts are being conducted by Suffolk County Parks, New York State Department of Environmental Conservation (NYSDEC) and the Central Pine Barrens Commission, including:**

**Monitoring:** Aerial surveys are conducted over Suffolk County Parks to identify potential SPB infested areas. SPB infestations are then confirmed and delineated on the ground by trained staff. Areas are prioritized to determine the order in which they are suppressed.

**Suppression:** Once the infested areas are delineated and prioritized, sawyer crews cut the infested trees as well as nearby trees in an effort to stop the spread.



## Why are the trees being cut?

Due to the extent of infestation across Long Island, eradication of this destructive beetle is unlikely. However, suppression cutting can minimize its spread and future impact by reducing population size and disrupting the movement of SPB. Cutting affected trees reduces the number of active beetles by disrupting pheromone movements and exposing the larvae to the natural elements (extreme cold and heat). Without suppression, the SPB can spread through a forest like wildfire.



# Southern Pine Beetle

## Natural History



Stage 3 trees

Stage 2 trees

Stage 1 Trees

*Aerial view of the spread and stages of SPB*

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## The Three Stages of Southern Pine Beetle Infestation



*SPB on pitch tube*



*SPB pitch tubes along tree*



*Checkered beetle  
(predator of SPB)*

**Stage 1:** The canopy retains its green color; however few to numerous white to red, popcorn-sized pitch tubes may develop between bark scales. SPB may be seen "swimming" in sap. The pitch tubes commonly occur along the length of the trunk higher than 5' from ground level. The Clerid spp. or Checkered Beetle, a predator of the SPB, may be observed foraging along the trunk of an infested tree. Reddish-white boring dust may also be present from a fresh attack.

**Stage 2:** The adult SPB creates S-shaped galleries (tunnels) in the cambium under the bark of the tree. Active SPB broods are currently developing underneath the bark at this stage. The entire crown will be orange instead of a healthy green. The pitch tubes along the bark scales harden to white cast. Woodpeckers can be observed pecking at these trees to feed on the SPB.



*S-shaped tunnels formed by SPB*



*Canopy of stage 2 trees*



*SPB exit holes*

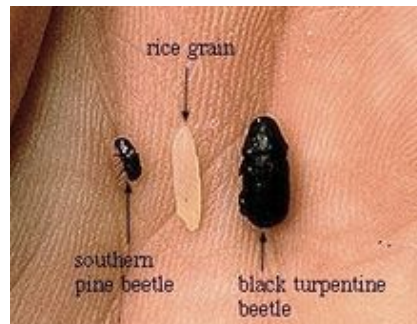


*Canopy of stage 3 tree (dead)*

**Stage 3:** The tree has dropped a majority of its needles due to complete disablement of the vascular system. The tree is considered dead at this stage and shows pin sized exit holes along the entire length of the trunk from where the SPB exited the tree.

## Southern Pine Beetle Look-a-like

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Size comparison between SPB and TB  
(<https://www.flickr.com/photos/usdagov/6347142467/>)



Turpentine pitch tubes

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## Monitoring and Control Methods

**Cooperative monitoring and suppression efforts are being conducted by Suffolk County Parks, the New York State Department of Environmental Conservation and the Central Pine Barrens Commission.**

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**Suppression:** Once the infested areas are delineated and prioritized, sawyer crews are sent in to cut the infested trees, as well as a buffer, to suppress the spread.

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## Why Are the Trees Being Cut?

Due to the extent of infestation across Long Island, eradication of this destructive beetle is unlikely. However, suppression cutting can minimize its spread and future impact by reducing population size and disrupting the movement of the SPB. Cutting affected trees reduces the number of active beetles by disrupting pheromone movements and exposing the larvae to the natural elements (extreme heat and cold). Without suppression, the SPB can spread through a forest like a wildfire.

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Infested trees marked for cutting

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## References and More Information

Clarke, S. R., & Nowak, J. (2009). Southern Pine Beetle. *Forest Insect & Disease Leaflet 49*, 1-8.

NYSDEC. (2016). *New York State Department of Environmental Conservation*. Retrieved 2017, from Southern Pine Beetle: *Dendroctonus frontalis*: [http://www.dec.ny.gov/docs/lands\\_forests\\_pdf/spbactsheet.pdf](http://www.dec.ny.gov/docs/lands_forests_pdf/spbactsheet.pdf)

NYSDEC. (2017). *Southern Pine Beetle*. Retrieved 2017, from New York State Department of Environmental Conservation: <http://www.dec.ny.gov/animals/99331.html>